

Federal Agency Aquaculture Profile Series U.S. Environmental Protection Agency (EPA)

Laws and EPA Regulations Affecting Aquaculture Operations:

Clean Water Act (CWA)

<http://www.epa.gov/agriculture/anaquidx.html>; <http://www.epa.gov/agriculture/anaqulaw.html>

NPDES Permits: The National Pollutant Discharge Elimination System (NPDES) program was created under the federal Clean Water Act to protect and improve water quality by regulating operations that discharge pollutants from discrete conveyances directly into waters of the United States. These operations, referred to as point source dischargers, are generally regulated by NPDES permits (40 CFR 122.2). An NPDES permit, issued by either EPA or an authorized state/territory, contains industry-specific technology-based and/or water-quality-based limits and establishes pollutant monitoring and reporting requirements to protect the quality of surface waters. NPDES permit limitations are based on best professional judgment (BPJ) when national effluent limitations guidelines (ELG) have not been issued pertaining to an industrial category or process. Specifically, the NPDES regulations require permit limitations on a case-by-case BPJ basis when effluent guidelines are inapplicable, or in combination with the effluent guidelines, where the ELG apply to only certain aspects of the operation or certain pollutants. CWA Section 402(a)(1); 40 CFR 122.44(k). Effluent guidelines (see below for more information) have been developed for certain CAAP facilities. 40 CFR Part 451. A facility that discharges into the nation's waters must obtain a permit before discharging.

NPDES permits are needed for discharges associated with:

1. **Aquaculture Projects** – An aquaculture project means a “defined managed water area which uses discharges of pollutants into that designated area for the maintenance or production of harvestable freshwater estuarine or marine plants or animals.” 40 CFR 122.25(b)(1).
2. **Concentrated Aquatic Animal Production Facilities (CAAP)** – CAAP means a “hatchery, fish farm, or other facility” which is designated by EPA per 40 CFR 122.24(c), or which satisfies the following criteria, found in 40 CFR 122 Appendix C:
 - a. Discharges at least 30 days per year; and either
 - i. Produces more than 9,090 harvest weight kilograms (about 20,000 pounds) of cold water fish (e.g., trout, salmon) per year and feeds more than 2,272 kilograms (about 5,000 pounds) of food during the calendar month of maximum feeding; or
 - ii. Produces more than 45,454 harvest weight kilograms (about 100,000 pounds) of warm water fish (e.g., catfish, sunfish, minnows) per year.
 1. (Note: closed ponds which discharge only during periods of excess runoff do not need a NPDES permit).

Effluent Guidelines: Effluent guidelines are technology based national standards for wastewater discharges to surface waters from point sources that are incorporated into NPDES permits. EPA also issues pretreatment standards for the discharge of wastewater from point sources into publicly owned treatment works (municipal sewage treatment plants). EPA issues effluent guidelines for categories of existing sources and sources under Title III of the CWA. The standards are technology-based (i.e., they are based on the performance of treatment and control technologies); they are not based on risk or impacts upon receiving waters.

On June 30, 2004 EPA finalized a rule establishing effluent guidelines regulations for concentrated aquatic animal production (CAAP), or farm-raised fish facilities (40 CFR Part 451). The regulation applies to the ~245 facilities that produce 100,000 pounds of fish annually and generate wastewater from their operations and discharge that wastewater directly into waters of the U.S. Facilities that are required to seek permit coverage, but are not covered by the ELG (i.e. operations that don't produce 100,000 pounds of fish

annually), would be subject to technology-based limits based on Best Professional Judgement (BPJ) from the permit authority. This rule was designed to help reduce discharges of conventional pollutants, primarily total suspended solids. It also helps reduce non-conventional pollutants such as nutrients. For more information on the CAAP effluent guidelines, please refer to

http://water.epa.gov/scitech/wastetech/guide/aquaculture/guidance_index.cfm or feel free to contact Meghan Hessenauer at 202-566-1040. For more information on NPDES permitting of aquaculture facilities, feel free to contact Jenny Molloy (tele: 202-564-1939; e-mail: molloy.jennifer@epa.gov).

Clean Water Act Section 404 Program: The CWA Section 404, administered by the U.S. Army Corps of Engineers (Corps) and the EPA, establishes a permitting program to regulate the discharge of dredged and fill material into waters of the U.S. Proposed discharges are evaluated for compliance with environmental criteria, i.e., the Section 404(b)(1) Guidelines, developed by the EPA in conjunction with the Corps. Examples of activities related to aquaculture that may be subject to Section 404 permitting requirements include the discharge of dredged or fill material into open waters, wetlands or vegetated shallows to prepare the bottom substrate for larval shellfish attachment and growth, or to construct fishery impoundments. Please refer to <http://water.epa.gov/lawsregs/guidance/cwa/dredgdiss/> for more information on the CWA Section 404 program, or feel free to contact Russ Kaiser (tele: 202-566-0963; e-mail: kaiser.russell@epa.gov).

Safe Drinking Water Act (SDWA)

<http://www.epa.gov/agriculture/anaquawater.html>; <http://water.epa.gov/type/groundwater/uic/index.cfm>

Aquaculture Waste Disposal Wells: If an agricultural establishment or agribusiness disposes of (or formerly disposed of) fluids on-site in a well (40 CFR 144.3), such as a deep-cased well, dry well, seepage pit, large capacity septic system, or a drainage well, it may trigger EPA's Underground Injection Control Program. Under the minimum federal requirements, aquaculture waste disposal wells are "authorized by rule" (40 CFR 144). This means that aquaculture waste disposal wells do not require a permit if they do not endanger underground sources of drinking water and they comply with federal UIC program requirements. The prohibition on endangerment means the introduction of any contaminant must not result in a violation of drinking water standards or otherwise endanger human health. Owners or operators of Class V aquaculture waste disposal wells must submit inventory information to the UIC Program (40 CFR 144.26). Inventory information includes: (1) facility name and location, (2) name and address of legal contact, (3) ownership of facility, (4) nature and type of injection wells, and (5) operating status of injection wells. States with primary enforcement authority may have more stringent requirements and in some cases an individual permit may be required.

While some aquaculture facilities use holding structures in natural, open water bodies and rely on natural water circulation for water replenishment, many facilities use closed systems (e.g., tanks or ponds) and accumulate wastewater and sludge that must be removed. At dozens of such facilities in Hawaii and several other states, this wastewater and sludge is disposed via underground injection. All injected aquaculture wastewater includes fecal and other excretory wastes and uneaten aquaculture food. The primary chemical and physical constituents of these wastewaters are nitrogen- and phosphorus-based nutrients and suspended and dissolved solids. Please refer to http://www.epa.gov/safewater/uic/class5/pdf/study_uic-class5_classvstudy_volume11-aquaculture.pdf for more information about Aquaculture Waste Disposal Wells or feel free to contact Jeff Jollie (tele: 202-564-3886; e-mail: jollie.jeff@epa.gov).

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

<http://www.epa.gov/pesticides/factsheets/registration.htm>

Pesticide Registration: FIFRA requires all pesticides sold or distributed in the United States (including imported pesticides) to be registered by EPA. EPA can authorize limited use of unregistered pesticides or pesticides registered for other uses to address emergencies (Section 18 registrations) and special local needs (Section 24c registrations), provided sufficient cause is demonstrated. Chemicals and other materials to be used in aquaculture, such as products intended for use to control pests (including, but not limited to, any insect, other arthropod, nematode, any plant growing where not wanted, including any moss, alga, liverwort, or other plant of any higher order, and any plant part such as a root) may be subject to Pesticide Registration by EPA prior to marketing to the user. Older pesticides are re-evaluated by EPA on a 15-year schedule, under the Registration Review program, to ensure that as the ability to assess risk evolves and policies and practices change, all registered products continue to meet the statutory standard.

In evaluating a pesticide registration application, EPA assesses a wide variety of potential human health and environmental effects associated with use of the product. In assessing the potential effects of a pesticide, EPA examines the active ingredient of the pesticide as well as its formulated products; the particular site or crop on which it is to be used; the amount, frequency, and timing of its use; and, storage and disposal practices. A producer of the pesticide who intends to market that product (*i.e.*, the registrant) must provide data from tests done according to EPA guidelines. Depending on the proposed use of a pesticide, registrants are typically required to submit a range of studies on chemical/physical properties, environmental fate, and the toxicity of the pure chemical (active ingredient). These tests evaluate whether a pesticide has the potential to contaminate surface or ground water from leaching, runoff, and spray drift and cause short-term and/or long-term adverse effects on humans, wildlife, fish, and plants, including endangered species and non-target organisms. EPA evaluates the potential for human health risks which range from short-term toxicity to long-term effects, such as cancer and reproductive system disorders.

EPA also must approve the language that appears on each pesticide label. A pesticide product can only be used legally according to the directions on the labeling accompanying it at the time of sale. Some pesticide products, classified as "Restricted Use," can be applied by certified applicators only and are not for general use. The aquaculture or aquatic production facility is responsible for application of all pesticides in strict accordance with product labels. Misuse of a pesticide, including application to an unlisted site or an application rate exceedance, can result in enforcement action. Applicators and aquaculture production facilities must verify that pesticides applied in their operations have an exemption from or established tolerances for their specific aquacultural commodities.

Aquaculture facilities rely on a range of pest management tools to produce fish and shellfish products. These tools can include the use of pesticides to control nuisance species such as weeds, algae, and undesirable aquatic animals, and those pesticide products are subject to testing described in the 40 CFR Part 158. Some products (e.g., therapeutic compounds) used in aquaculture to control pests, such as internal worms or ichthyophthirius, are handled by using products regulated by the Food and Drug Administration (FDA). Please refer to the "Guide to Drug, Vaccine, and Pesticide Use in Aquaculture" at http://www.fws.gov/fisheries/aadap/AFS-FCS%20documents/GUIDE_OCT_2011.pdf or feel free to contact Monica Wait for more information (tele: 703-347-8019; e-mail: wait.monica@epa.gov).

Toxic Substances Control Act (TSCA)

<http://www.epa.gov/lawsregs/laws/tsca.html>

The Toxic Substances Control Act of 1976 provides EPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. Certain substances are generally excluded from TSCA, including, among others, food, drugs, cosmetics and pesticides. TSCA may impact products used by, or manufactured or processed as part of, aquaculture production operations if such products are composed of or contain chemical substances that are regulated by TSCA. TSCA and its implementing regulations apply to both new chemical substances, *i.e.*, those not on the TSCA section 8(b) Inventory of chemicals in commerce, and existing chemical substances on the TSCA Inventory. For more information on the TSCA program, feel free to contact Jeffery Morris (tele: 202-564-6756; e-mail: morris.jeff@epa.gov). For access to the TSCA inventory, go to: <http://www.epa.gov/opptintr/existingchemicals/pubs/tscainventory/index.html>

NOTE: This is a list of some of the key authorities administered by the U.S. EPA that affect aquaculture. It is not intended to be exhaustive. Other regulations not described here may also apply.



Compliance Guide for the Concentrated Aquatic Animal Production Point Source Category



United States
Environmental
Protection Agency

Office of Ground Water
and Drinking Water (1041)

EPA/615-R-99-018
September 1999



The Class V Underground Injection Control Study

Volume 11

Aquaculture Waste Disposal Wells

Revised October 1998 (1999)

American Fisheries Society
Fish Culture Section



Guide to Using Drugs, Biologics, and Other Chemicals in Aquaculture



AFS Working Group on Aquaculture Drugs, Chemicals, and Biologics